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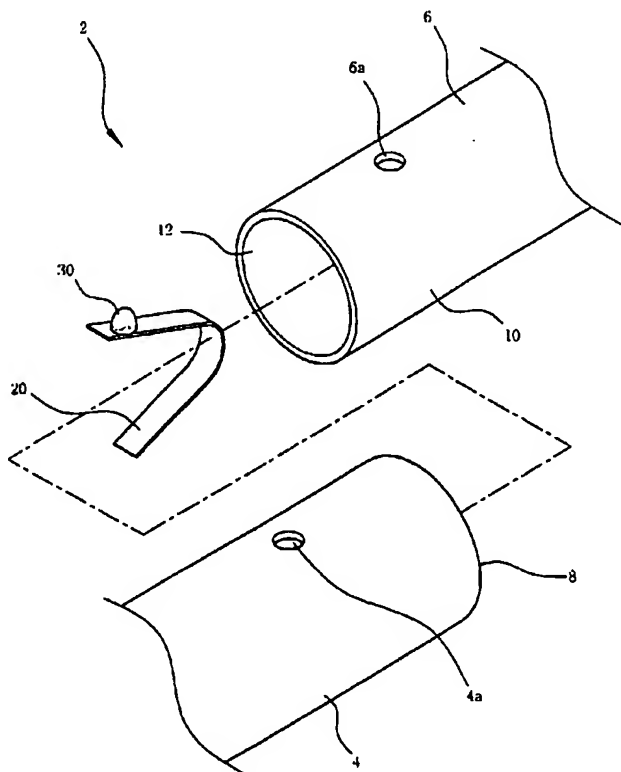
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[Continued on next page]

(54) Title: CONNECTION MEMBER OF MOVABLE TYPE CAMP HAVING GOOD DETACHABILITY



(57) Abstract: The present invention discloses, a connection member of a movable type camp with a good detachability comprising : a main pipe and an auxiliary pipe having a penetration hole at a predetermined portion of its external circumference surface, respectively; an elastic member having a "U" shape attached to the inside of the auxiliary pipe so that a constant elastic force is generated toward the inside circumference portion from the center of the auxiliary pipe; and a connection protrusion formed at the top surface of the upper end portion of the elastic member, which is inserted to the penetration holes of the main pipe and the auxiliary pipe and exposed to the outside, whereby the assemble and disassemble processes of the framework are performed easily.



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CONNECTION MEMBER OF MOVABLE TYPE CAMP HAVING GOOD DETACHABILITY

TECHNICAL FIELD

The present invention relates to a connection member of
5 a movable type camp having a good detachability, and more
particularly to a connection member of a movable type camp
having a good detachability in which an insertion hole is formed
at a main pipe and an auxiliary pipe, respectively, when
connecting them, a connection protrusion capable of combining
10 to the inserting holes simultaneously may be elastically
protruded from the inside of the auxiliary pipe, and inclined
surfaces with a constant angle are formed at the front surface
portion and a side surface portion of the connection protrusion
for assembling/disassembling easily the pipe.

15

BACKGROUND ART

As is generally well known, various types of a field
barrack or camp have a tent shape structure widely known.
According to the technical gist of the general field barrack
20 and the camp, they are maintained with a tunnel shape by using

a long pole combined with plural poles and have a structure for preventing the body shape of the field barrack or camp from modifying by the impact from the outside and simultaneously for assembling and disassembling the poles easily.

5 According to the above conventional field barrack or camp, its entire framework or structure is comprised of only a long pole as a main pipe and plural poles combined to the long pole, and cloth is covered on the upper portion of the framework. Since the plural poles are combined and supported to the long pole,
10 in general, the long pole and plural poles are combined with an interference fit method, and the long pole and other poles are connected with an elastic wire.

 However, there is a disadvantage that in the combining structure of the interference fit method, when the plural poles
15 are inserted frequently to an inlet portion of the long pole, the inlet portion is expanded so that the combined pole is disassembled easily by a weak external force.

 In order to solve the foregoing problem, recently a connection member constructed by at least two or more poles,
20 as a set, in which its end portion is inserted to the inside

of the other pipe is released. In such a connection member, a connection protrusion with an elastic force is formed at an external circumference portion of a pipe and a predetermined penetration hole is formed at an end portion of another pipe, 5 so that the connection force can be maintained by inserting the connection protrusion to the penetration hole.

However, according to the above conventional connection member having the connection protrusion, there are several disadvantages that since when combining the two pipes, a user 10 must press the connection protrusion by using one's own finger, and when disassembling the pipes, there can be disassembled only when the user also must press the connection protrusion protruded through the penetration hole and so the connection force is removed, the connection member is very inconvenient 15 in use and in a case that a finger is caught in the penetration hole when pressing the protruded connection protrusion, a user may receive a wound.

DISCLOSURE OF THE INVENTION

20 An object of the present invention is to provide a

connection member of a movable type camp having a good detachability in which an insertion hole is formed at a main pipe and an auxiliary pipe, respectively, when connecting them, a connection protrusion capable of combining to the inserting
5 holes simultaneously may be elastically protruded from the inside of the auxiliary pipe, and inclined surfaces with a constant angle are formed at the front surface portion and a side surface portion of the connection protrusion for assembling/disassembling easily the pipe.

10 In order to achieve the above-described object of the invention, there is provided, in a framework connection structure of a camp in which the framework is constructed by a main pipe having a predetermined diameter and openings formed its both ends, respectively and an auxiliary pipe inserted to
15 the main pipe for forming the framework, a connection member of a movable type camp with a good detachability comprising: the main pipe and the auxiliary pipe having a penetration hole at a predetermined portion of its external circumference surface, respectively; an elastic member having a "ㄣ" shape
20 attached to the inside of the auxiliary pipe so that a constant

elastic force is generated toward the inside circumference portion from the center of the auxiliary pipe; and a connection protrusion formed at the top surface of the upper end portion of the elastic member, which is inserted to the penetration
5 holes of the main pipe and the auxiliary pipe and exposed to the outside, whereby the assemble and disassemble processes of the framework are performed easily.

Preferably, the connection protrusion has a front surface inclined portion formed with a predetermined angle α by a
10 grinding process at its front surface portion, so that when connecting the main pipe and the auxiliary pipe, the opening of the main pipe can press the connection protrusion.

More preferably, the connection protrusion has a side surface inclined portion formed with a predetermined angle β
15 by a grinding process at its side surface portion, so that when disassembling, when the auxiliary pipe is rotated toward a direction, the penetration hole of the main pipe can press the side surface inclined portion of the connection protrusion.

20 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view showing the appearance of a connection member of a movable type camp with a good detachability in accordance with the present invention;

Fig. 2 is an exploded perspective view showing a connection member of a movable type camp with a good detachability in accordance with the present invention;

Fig. 3 is a perspective view showing an elastic member in a connection member of a movable type camp with a good detachability in accordance with the present invention; and

Figs. 4a and 4b are views showing an inclined angle of a connection protrusion of an elastic member in a connection member of a movable type camp with a good detachability in accordance with the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

A connection member of a movable type camp with a good detachability in accordance with the present invention will now be described in detail with reference to the accompanying drawings.

Fig. 1 is a perspective view showing the appearance of

a connection member of a movable type camp with a good detachability in accordance with the present invention and Fig. 2 is an exploded perspective view showing a connection member of a movable type camp with a good detachability in accordance with the present invention.

Referring to Figs 1 and 2, a connection member 2 of a movable type camp with a good detachability in accordance with an embodiment of the present invention comprises a main pipe 4 forming a framework of a camp and an auxiliary pipe 6 in which its end is inserted to an end of the main pipe 4. The main pipe 4 is a hollow type and a general pipe in which an opening 8 is formed at its both ends, respectively, and a penetration hole 4a is formed at its external circumference predetermined portion.

Also, in the auxiliary pipe 6, the diameter until its external circumference surface is the same as the diameter until internal circumference surface, so that an end portion of the auxiliary pipe can be inserted to the opening 8 of the main pipe 4. A penetration hole 6a is formed at its external circumference predetermined portion like the main pipe 4.

On the other hand, in the present invention, a "C" shape of an elastic member 20, which is inserted to the inside of the auxiliary pipe 6 and generates a constant elastic force toward the internal circumference surface from the center of the auxiliary pipe 6 is provided. A lower end of the elastic member 20 is welded to the internal circumference surface of the auxiliary pipe 6 facing to the penetration hole 6a of the auxiliary pipe 6.

Also, a connection protrusion 30 inserted through the penetration holes 4a and 6a formed at the main pipe 4 and the auxiliary pipe 6 and exposed to the outside is formed at an upper surface of an upper side end portion of the elastic member 20. Since the elastic member 20 is fixed to the internal circumference surface of the auxiliary pipe 6, the connection protrusion 30 is always exposed through the penetration hole 6a of the auxiliary pipe 6.

Accordingly, when connecting the main pipe 4 and the auxiliary pipe 6, the connection protrusion 30 exposed through the penetration hole 6a of the auxiliary pipe 6 is fitted in the penetration hole 4a formed at the main pipe 4, thereby

accomplishing the connection simply. At this time, when moving the connection protrusion 30 along the internal circumference surface of the main pipe 4, the connection protrusion 30 presses the elastic member 20 and is inserted with a constant length
5 toward the inside of the pipe, and at such a state, an end portion 10 of the auxiliary pipe 6 can be inserted easily along the inside circumference surface of the main pipe 4.

Especially, in the connection protrusion 30 provided to the connection member of a movable type camp with a good
10 detachability in accordance with the present invention, its shape is characterized in that when assembling and disassembling the main pipe 4 and the auxiliary pipe 6, the assemble and disassemble processes are performed easily. Detailed explanation about the shape of the connection
15 protrusion 30 will be described hereinafter with reference to Figs. 3, 4 and 5.

Fig. 3 is a perspective view showing an elastic member in a connection member of a movable type camp with a good detachability in accordance with the present invention and Figs.
20 4a and 4b are views showing an inclined angle of a connection

protrusion of an elastic member in a connection member of a movable type camp with a good detachability in accordance with the present invention.

Referring to the above drawings, in the connection member
5 of a movable type camp with a good detachability in accordance with the present invention, an elastic member 20 is curved with a "ㄷ" shape and contracted, so that an elastic force is generated. At this time, according to the curved elastic member 20, when expanding the elastic member 20, an expansion force do not
10 applied exactly toward an upper direction. Accordingly, in order to connect the connection protrusion 30 easily through the penetration holes 4a and 6a, an inclined angle with a predetermined angle α , as shown in Fig. 4a, is formed at the front surface of the connection protrusion 30 by a grinding
15 process, thereby forming a front surface inclined portion 30a.

Especially, since the front surface inclined portion 30a of the predetermined angle α formed at the front surface portion of the connection protrusion 30 in accordance with the present invention is formed toward the connection direction of the main
20 pipe 4, when inserting and connecting the auxiliary pipe 6 to

the main pipe 4, an opening 8 of the main pipe 4 presses to the front surface inclined portion 30a of the connection protrusion 30, so that the connection protrusion 30 is pressed naturally, moved downwardly and connected.

5 Also, preferably, when disassembling the auxiliary pipe 6 from the main pipe 4, in order to disassemble the auxiliary pipe easily, a left side surface inclined portion 30b with a predetermined inclined angle β , as shown in Fig. 4b, is formed at a side surface of the connection protrusion 30 by a grinding
10 process.

That is, although an inclined surface with a constant angle may be formed at the rear end surface of the auxiliary pipe in order to disassemble the auxiliary pipe 6 from the main pipe 4 easily by a grinding process, it is not desirable because,
15 in such a case, the auxiliary pipe 6 can be disassembled from the main pipe 4 when a user does not want.

However, in a case that the inclined portion 30b with the predetermined inclined angle β is formed at the left side of the auxiliary pipe in accordance with the present invention,
20 when a user wants to disassemble the auxiliary pipe 6 from the

main pipe 4, the user rotates the auxiliary pipe 6 or the main pipe 4 so that an edge of the penetration hole 4a of the main pipe 4 can press the connection protrusion 30 along the left side surface inclined portion 30b of the connection protrusion 30, and the connection protrusion 30 is pressed and disassembled from the penetration hole 4a. At the state, when the user takes out the auxiliary pipe 6 from the main pipe 4, the auxiliary pipe 6 and the main pipe 4 are entirely disassembled.

At this time, in a case that the side surface inclined portion is formed at both sides, not a side, of the connection protrusion 30, since the top portion 32 of the connection protrusion 30 is formed very sharply, the connection protrusion 30 can be detached more easily rather than before, in the present invention, the inclined portion 30b is formed only at a side surface (for example, a right or left side surface).

Also, although it is not shown, penetration holes 4a and 6a are formed at the external circumference surface of the auxiliary pipe 6 and the main pipe 4, respectively, and the elastic member 20 in which the connection protrusion 30 is attached at the upper surface thereof is attached to the

internal circumference surface of the auxiliary pipe 6. Thereafter, it is desirable that an elastic wire(not shown) is inserted through the auxiliary pipe 6 and the main pipe 4 in order to connect them.

5 On the other hand, a hooking protrusion(not shown) is formed at a predetermined portion of the internal circumference surface of the main pipe 4 in order not to be inserted the auxiliary pipe 6 with a length beyond a constant length. At a state that the connection protrusion 30 of the auxiliary pipe
10 6 is inserted to the penetration hole 4a of the main pipe 4 completely, when the auxiliary pipe 6 is more entered to the inside of the main pipe 4, since an excessive external force is applied to the connection protrusion 30 and so the connection protrusion 30 can be damaged, the hooking protrusion blocks the
15 entry of the end portion of the auxiliary pipe 6.

 In the connection member of a movable type camp with a good detachability, as constructed above, since the elastic member 20 in which the connection protrusion 30 is attached at the upper surface thereof is attached to the internal
20 circumference surface of the auxiliary pipe 6, when inserting

the end portion 10 of the auxiliary pipe 6 to the main pipe 4 through the opening 8 of the main pipe 4, the opening 8 of the main pipe 4 presses to the front surface inclined portion 30a of the connection protrusion 30, so that the connection protrusion 30 is pressed naturally by the opening 8 of the main pipe 4 and moved downwardly. At the state, the auxiliary pipe 6 is continually inserted to the inside of the main pipe 4 and when the connection protrusion 30 is reached to the position of the penetration hole 4a, the connection protrusion 30 is protruded and connected at the upper end portion of the penetration hole 4a by the elastic member 20.

In contrast, when disassembling the auxiliary pipe 6 and the main pipe 4, a user rotates the auxiliary pipe 6 or the main pipe 4 so that an edge of the penetration hole 4a of the main pipe 4 can press the connection protrusion 30 along the left side surface inclined portion 30b of the connection protrusion 30.

Thereafter, the connection protrusion 30 is pressed by the side surface circumference portion of the penetration hole 4a, moved downwardly and disassembled from the penetration hole

4a. At the state, when the user takes out the auxiliary pipe 6 from the main pipe 4, the auxiliary pipe 6 and the main pipe 4 are entirely disassembled.

Accordingly, the main pipe 4 and the auxiliary pipe 6 as
5 a connection member of a movable type camp with a good detachability in accordance with the present invention make move the connection protrusion 30 downwardly without contacting directly with the connection protrusion 30, so the assemble and disassemble processes are very convenient.

10 On the other hand, the connection member of a movable type camp with a good detachability in accordance with the present invention do not limited above embodiment and can be modified various types without departing the scope of the technical concept of the present invention.

15

INDUSTRIAL APPLICABILITY

As discussed earlier, according to a connection member of a movable type camp with a good detachability in accordance with the present invention, in the main pipe and the auxiliary
20 pipe, an inclined surface portion is formed at the connection

direction of the connection protrusion formed at the auxiliary pipe and an inclined surface portion is also formed at a side portion of the connection protrusion, so that since the connection protrusion 30 can be moved downwardly, although a user do not press the connection protrusion with one's own finger and the like, there are advantages that the assemble and disassemble processes are very convenient.

WHAT IS CLAIMED IS:

1. In a framework connection structure of a camp in which the framework is constructed by a main pipe having a predetermined diameter and openings formed its both ends, respectively and an auxiliary pipe inserted to the main pipe for forming the framework, a connection member of a movable type camp with a good detachability comprising:

the main pipe and the auxiliary pipe having a penetration hole at a predetermined portion of its external circumference surface, respectively;

an elastic member having a "C" shape attached to the inside of the auxiliary pipe so that a constant elastic force is generated toward the inside circumference portion from the center of the auxiliary pipe; and

a connection protrusion formed at the top surface of the upper end portion of the elastic member, which is inserted to the penetration holes of the main pipe and the auxiliary pipe and exposed to the outside, whereby the assemble and disassemble processes of the framework are performed easily.

2. The connection member of a movable type camp with a good detachability of claim 1, wherein the connection
5 protrusion has a front surface inclined portion formed with a predetermined angle α by a grinding process at its front surface portion, so that when connecting the main pipe and the auxiliary pipe, the opening of the main pipe can press the connection protrusion.

10

3. The connection member of a movable type camp with a good detachability of claim 1, wherein the connection
protrusion has a side surface inclined portion formed with a predetermined angle β by a grinding process at its side surface
15 portion, so that when disassembling, when the auxiliary pipe is rotated toward a direction, the penetration hole of the main pipe can press the side surface inclined portion of the connection protrusion.

20

FIG. 1

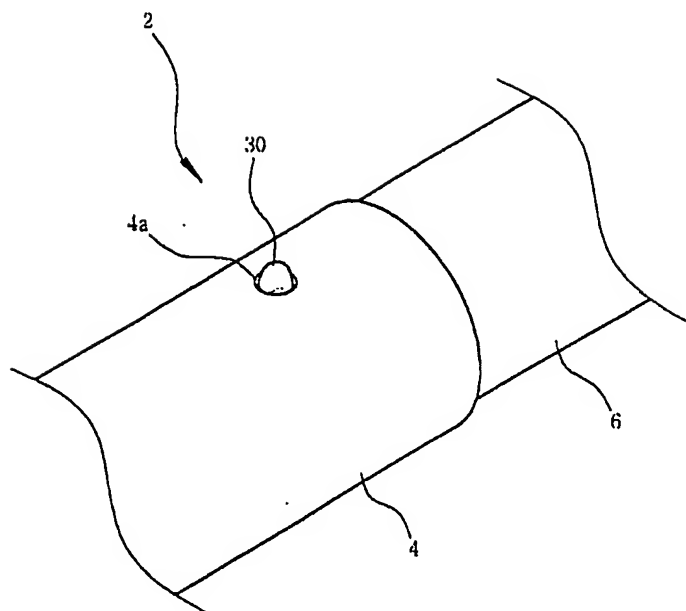
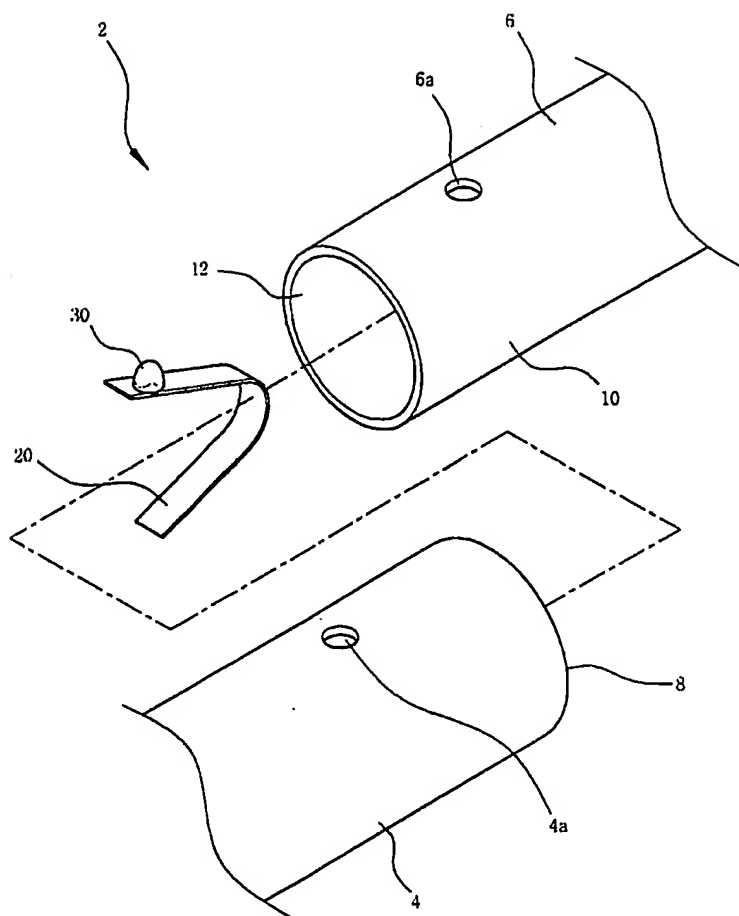
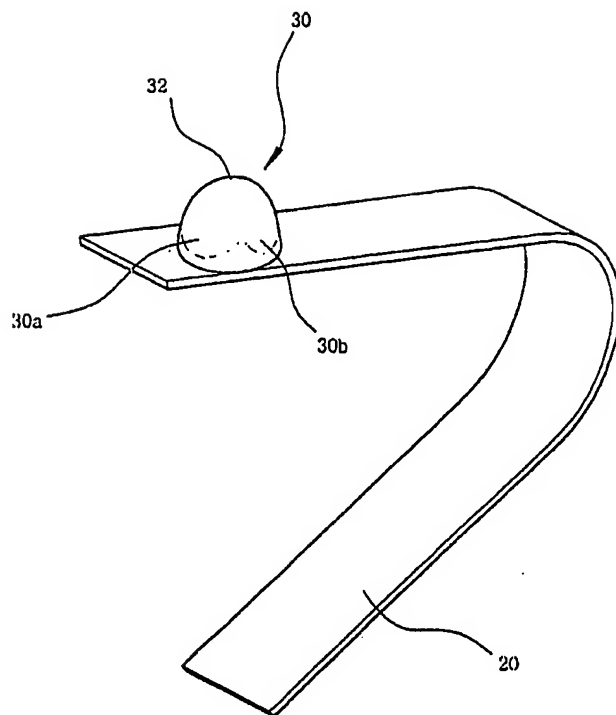


FIG. 2



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FIG. 3



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FIG. 4

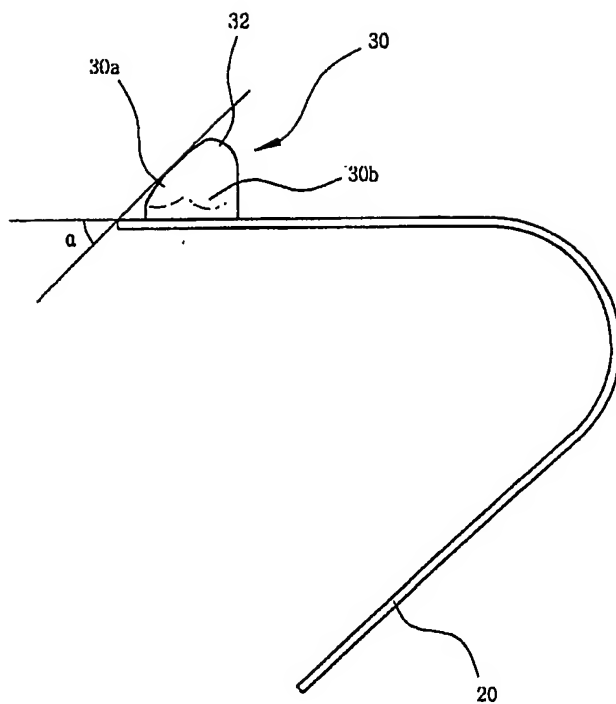
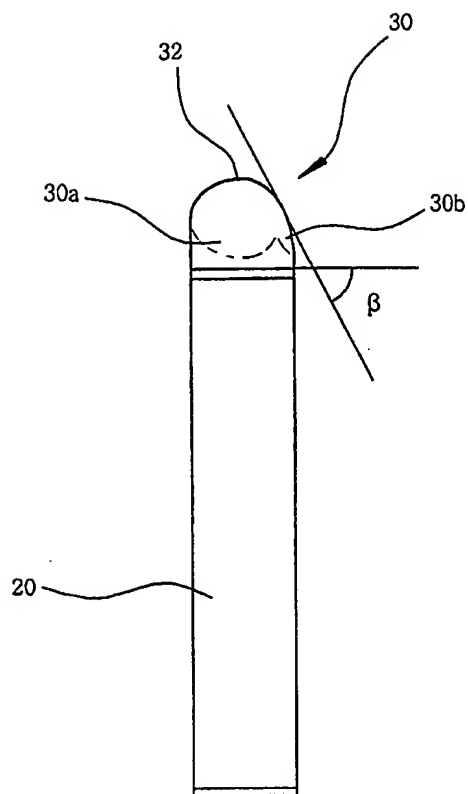


FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 03/01904-0

CLASSIFICATION OF SUBJECT MATTER		
IPC ⁷ : E04H 15/60; F16B 7/04		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC ⁷ : E04H; F16B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EPODOC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5515574 A (Timothy J. Larson) 14 May 1996 (14.05.96) <i>description, column 4, lines 21-29; fig. 4,5.</i>	1-3
X	DE 29815824 U1 (Puky GmbH & Co. KG) 10 February 2000 (10.02.00) <i>claims 1,8,9; fig. 3-5.</i>	1-3
X	DE 9411951 U1 (G.F Merker-Rivela) 3 November 1994 (03.11.94) <i>description, page 7, lines 6-11; fig. 1.</i>	1-3
X	US 795717 A (Lloyd E. Morrow) 25 July 1905 (25.07.05) <i>description, page 2, first paragraph; fig. 2,5.</i>	1,2
A		3
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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Patent document cited in search report			Publication date	Patent family member(s)	Publication date
DE	A	29815824 U1		none	
DE	A	9411951U 1		none	
US	A	5515574	1996-05-14	none	
--	A	-- US795717 ---	0000-00-00	none	